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M E M O R A N D U M

DATE: May 15, 2013

TO: Southern California Association of Governments, Transportation Conformity Working Group

FROM: Keith Lay, LSA Associates, Inc.

SUBJECT: Modification of Alternatives for the I-215/Barton Road Interchange Improvement Project (SBD31850)

The purpose of this memorandum is to inform the Transportation Conformity Working Group (TCWG) of revisions to the build alternatives for the Interstate 215 (I-215)/Barton Road Interchange Improvement Project (SBD31850).

A PM[1] Conformity Analysis was prepared for the proposed project and underwent Interagency Consultation (IAC) on August 25, 2009. The TCWG determined that the proposed project was not a project of air quality concern (POAQC). The August 2009 analysis included three build alternatives (Alternatives 3, 5, and 6) and one no build alternative (Alternative 1). A memorandum was submitted to the TCWG on August 28, 2012 the TCWG to add a new build alternative (Alternative 7) and eliminate Alternative 5 from consideration. The TCWG determined that the project would not be a POAQC with the addition of Alternative 7. This memorandum has been prepared to inform the TCWG of additional changes to Alternative 7.

Each of the project alternatives is described below. As shown, the new Modified Alternative 7 would provide the same number of through lanes on Barton Road as Build Alternatives 3, 5, and 6 and would replace the existing Alternative 7.

Alternative 1 (No Build). Under Alternative 1, no interchange reconstruction would occur. This alternative would not improve operations, increase highway capacity, or reduce highway congestion at the I-215/Barton Road interchange.

Alternative 3 (Partial Cloverleaf). Alternative 3 would reconstruct and improve the existing interchange in a cloverleaf design. This alternative would widen the Barton Road overcrossing from one to three lanes in each direction, allowing for additional turning lanes onto the southbound and northbound loop on-ramps. The existing freeway overcrossing would be replaced with a new structure comprising four through lanes and two turn lanes.

[1] Particulate matter.

Alternative 5 (Single-Point/Bowtie Interchange). Alternative 5 would be constructed as a single-point/bowtie interchange. Under this alternative, Barton Road would be widened to two lanes in each direction. The existing overcrossing would be replaced with a new structure with four through lanes and three turn lanes.

Alternative 6 (Modified Cloverleaf). Under Alternative 6, Barton Road would be widened to two through lanes in each direction plus one left-turn and one right-turn lane. The existing overcrossing would be replaced with a new structure with four through lanes and three turn lanes.

Alternative 7 (Modified Cloverleaf/Diamond). Under Alternative 7, Barton Road would be widened to two through lanes in each direction plus one left-turn and one right-turn lane. The existing overcrossing would be replaced with a new structure with four through lanes and two turn lanes.

Modified Alternative 7. Modified Alternative 7 includes a roundabout at the intersection of La Crosse Avenue at Barton Road and the Interstate 215 (I-215) southbound on- and off-ramps instead of a standard four-leg signalized intersection with a right-in/right-out configuration at the southern segment of La Crosse Avenue at Barton Road. A roundabout in this location would provide all turning movements between properties on La Crosse Avenue and Barton Road/I-215 ramps, while avoiding direct (and unintentional) access from La Crosse Avenue to the southbound freeway off-ramp.

Table A lists the average daily traffic (ADT) and daily truck volumes that were included in the August 2009 analysis. Table B lists the ADT and daily truck volumes for the current build alternatives. As shown in Tables A and B, the traffic volumes for the new Modified Alternative 7 match the Alternative 3 volumes that were evaluated in the August 2009 analysis.

Table A: 2040 Average Daily Traffic Volumes (Total AADT/Truck AADT)

Roadway Link	Alt 1 Traffic Volumes	Alt 3 Traffic Volumes	Alt 5 Traffic Volumes	Alt 6 Traffic Volumes
I-215 between Washington and Barton	332,800 (23,296)	332,800 (23,296)	332,800 (23,296)	332,800 (23,296)
I-215 between Barton and Iowa	306,100 (21,427)	306,100 (21,427)	306,100 (21,427)	306,100 (21,427)
Barton Road west of Grand Terrace	25,750 (1,803)	24,300 (1,701)	24,300 (1,701)	24,300 (1,701)
Barton Road between Grand Terrace and I-215	25,850 (1,810)	26,490 (1,854)	26,490 (1,854)	26,490 (1,854)
Barton Road between I-215 and Michigan	44,350 (3,105)	44,250 (3,098)	44,250 (3,098)	34,690 (2,428)
Barton Road between Michigan and Vivienda	39,250 (2,748)	44,250 (3,098)	44,250 (3,098)	34,690 (2,428)

Source: *Traffic Operations Analysis*, May 2009.
AADT = average annual daily traffic
Alt = Alternative
I-215 = Interstate 215

Tables C through G list the intersection levels of service (LOS) under the no build (Alternative 1), Alternative 3, Alternative 5, Alternative 6, and Modified Alternative 7 conditions, respectively. As shown in Table G, the intersection LOS under Modified Alternative 7 is similar to the other build alternatives (Tables D through F) and better than the no build alternative (Table C) LOS.

As discussed above, the traffic conditions under Modified Alternative 7 would be similar to or the same as the conditions under the build alternatives that were included in the August 2009 PM Conformity Analysis. Therefore, it is requested that the TCWG confirm that the addition of the Modified Alterative 7 does not change the August 25, 2009, determination that the proposed I-215/Barton Road Interchange Improvement Project is not a POAQC.

Table B: 2040 Average Daily Traffic Volumes (Total AADT/Truck AADT)

Roadway Link	Alt 1 Traffic Volumes	Alt 3 Traffic Volumes	Alt 6 Traffic Volumes	Modified Alt 7 Traffic Volumes
I-215 between Washington and Barton	332,800 (23,296)	332,800 (23,296)	332,800 (23,296)	332,800 (23,296)
I-215 between Barton and Iowa	306,100 (21,427)	306,100 (21,427)	306,100 (21,427)	306,100 (21,427)
Barton Road west of Grand Terrace	25,750 (1,803)	24,300 (1,701)	24,300 (1,701)	24,300 (1,701)
Barton Road between Grand Terrace and I-215	25,850 (1,810)	26,490 (1,854)	26,490 (1,854)	26,490 (1,854)
Barton Road between I-215 and Michigan	44,350 (3,105)	44,250 (3,098)	34,690 (2,428)	44,250 (3,098)
Barton Road between Michigan and Vivienda	39,250 (2,748)	44,250 (3,098)	34,690 (2,428)	44,250 (3,098)

Source: *Revised Traffic Operations Analysis*, December 2011.
AADT = average annual daily traffic
Alt = Alternative
I-215 = Interstate 215

Table C: 2040 Alternative 1(No Build) Intersection LOS

	Intersection	AM Peak Hour LOS	AM Peak Hour Delay (sec)	AM Peak Hour V/C	PM Peak Hour LOS	PM Peak Hour Delay (sec)	PM Peak Hour V/C
1.	Barton Road/La Cadena Drive	C	31.4	0.94	F	169.3	1.51
2.	Barton Road/Grand Terrace Road	F	>500	-	F	>500	-
3.	Barton Road/La Cross Avenue	F	223.4	-	F	>500	-
4.	Barton Road/I-215 SB Ramps	F	184.8	1.40	F	290.6	1.70
5.	Barton Road/I-215 NB Ramps	F	99.7	1.31	F	251.3	1.66
6.	Barton Road/Michigan Street	F	101.7	1.20	F	135.7	1.32
7.	Barton Road/Vivienda Avenue	F	434.9	-	F	>500	-

Source: *Revised Traffic Operations Analysis*, December 2011.
I-215 = Interstate 215
LOS = level of service
NB = northbound
SB = southbound
sec = seconds
v/c = volume-to-capacity ratio

Table D: 2040 Alternative 3 Intersection LOS

	Intersection	AM Peak Hour			PM Peak Hour		
		LOS	Delay (sec)	V/C	LOS	Delay (sec)	V/C
1.	Barton Road/La Cadena Drive	D	35.5	0.97	F	163.7	1.49
2.	Barton Road/Grand Terrace Road	A	6.3	0.60	A	5.5	0.60
3.	Barton Road/La Cross Avenue	Does Not Exist					
4.	Barton Road/I-215 SB Ramps	B	14.6	0.68	B	12.9	0.61
5.	Barton Road/I-215 NB Ramps	A	9.5	0.71	B	13.7	0.83
6.	Barton Road/Michigan Street	Does Not Exist					
7.	Barton Road/Vivienda Avenue	D	45.7	0.91	D	38.8	0.90

Source: *Revised Traffic Operations Analysis*, December 2011.
I-215 = Interstate 215 SB = southbound
LOS = level of service sec = seconds
NB = northbound v/c = volume-to-capacity ratio

Table E: 2040 Alternative 5 Intersection LOS

	Intersection	AM Peak Hour			PM Peak Hour		
		LOS	Delay (sec)	V/C	LOS	Delay (sec)	V/C
1.	Barton Road/La Cadena Drive	C	34.5	0.97	F	167.0	1.49
2.	Barton Road/Grand Terrace Road	A	7.6	0.60	A	5.9	0.60
3.	Barton Road/La Cross Avenue	Does Not Exist					
4.	Barton Road/I-215 SB Ramps	C	23.8	0.75	C	31.8	0.87
5.	Barton Road/I-215 NB Ramps	Does Not Exist					
6.	Barton Road/Michigan Street	Does Not Exist					
7.	Barton Road/Vivienda Avenue	D	43.4	0.91	C	32.4	0.90

Source: *Traffic Operations Analysis*, May 2009.
I-215 = Interstate 215 SB = southbound
LOS = level of service sec = seconds
NB = northbound v/c = volume-to-capacity ratio

Table F: 2040 Alternative 6 Intersection LOS

	Intersection	AM Peak Hour			PM Peak Hour		
		LOS	Delay (sec)	V/C	LOS	Delay (sec)	V/C
1.	Barton Road/La Cadena Drive	D	39.0	0.96	F	165.7	1.49
2.	Barton Road/Grand Terrace Road	A	7.6	0.61	A	6.3	0.58
3.	Barton Road/La Cross Avenue	Does Not Exist					
4.	Barton Road/I-215 SB Ramps	B	20.3	0.68	B	16.3	0.63
5.	Barton Road/I-215 NB Ramps	C	23.3	0.90	B	19.1	0.83
6.	Barton Road/Michigan Street	Does Not Exist					
7.	Barton Road/Vivienda Avenue	D	50.7	0.93	D	49.8	0.95

Source: *Revised Traffic Operations Analysis*, May 2009.
I-215 = Interstate 215 SB = southbound
LOS = level of service sec = seconds
NB = northbound v/c = volume-to-capacity ratio

Table G: 2040 Modified Alternative 7 Intersection LOS

	Intersection	AM Peak Hour			PM Peak Hour		
		LOS	Delay (sec)	V/C	LOS	Delay (sec)	V/C
1.	Barton Road/La Cadena Drive	D	42.3	0.97	F	168.9	1.49
2.	Barton Road/Grand Terrace Road	B	10.2	0.62	A	5.4	0.58
3.	Barton Road/La Cross Avenue	Does not exist					
4.	Barton Road/I-215 SB Ramps	A	7.0	-	B	17.0	-
5.	Barton Road/I-215 NB Ramps	B	14.0	0.70	C	30.5	0.95
6.	Barton Road/Michigan Street	C	26.7	0.69	C	23.3	0.55
7.	Barton Road/Vivienda Avenue	D	51.8	0.90	D	45.2	0.97

Source: *Barton Road Interchange Improvement Project: Roundabout Analysis*, AECOM, January 15, 2013.
I-215 = Interstate 215
LOS = level of service
NB = northbound
SB = southbound
sec = seconds
v/c = volume-to-capacity ratio